Rebel

TOOLS

DIGITAL
MULTIMETER

USER'S
MANUAL

DE EN PL RO

model: MIE-RB-830, 830BUZ, 838

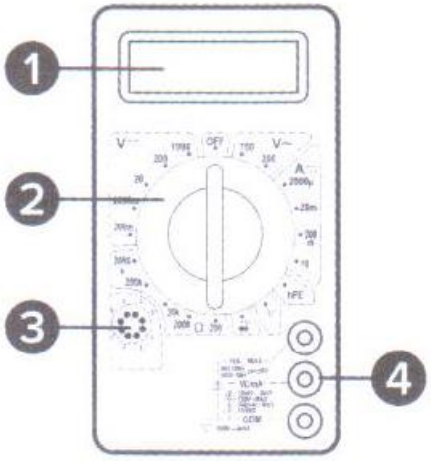
SAFETY INSTRUCTIONS

In order to avoid electric shock or other injuries, follow the safety instructions below:

1. Before using the device, inspect the case for any mechanical damage. If the case has cracks or is missing any part, do not use the device.
2. Before using the device, check the test leads for any insulation damage. If the test leads have insulation damage or cuts, do not use the device.
3. Do not input voltages higher than those in the specification.
4. During measurements do not change the position of the rotary switch.
5. Take extra precaution while measuring voltages above 60 V DC and 30 V AC.
6. Before measurement position the rotary switch to correct position and connect the test leads to the proper terminals.
7. Do not use the device in temperatures exceeding the range in specification, in high humidity, and near explosives and flammables.
8. During measurement, hold the test leads by the finger guards.
9. Before measuring resistance, continuity, diodes and hFE, disconnect the measured circuit from power and discharge all capacitors.
10. If the display shows low battery icon, change the batteries. Otherwise the accuracy of measurements may be decreased.
11. Before opening the battery case disconnect the test leads from measured circuit and from the device.
12. Spare parts (battery and fuse) must be replaced for a new ones and with the same specification.

13. Do not tamper with devices internal circuits. This may lead to accuracy decrease or damaging the device.
14. The device is intended for indoors use only.
15. Take out the batteries, if the device is not going to be used for a long time.

PRODUCT DESCRIPTION



1. Display
2. Rotary switch
3. hFE socket
4. Connection terminals

OPERATION

AC and DC measurement

1. Connect the red test lead to the VΩmA terminal.
2. Connect the black test lead to the COM terminal.
3. Set the rotary switch to proper voltage range.
4. Connect the test leads to a measured circuit.
5. Turn on the circuits power. The voltage and polarization will show on the display.

*If the range is not known, set the range to highest and gradually lower it, until getting the accurate measurement.

DC current measurement

1. Connect the red test lead to the VΩmA terminal. If the measurement will be in 200 mA - 10 A range, connect the red test lead to the 10 A terminal.
2. Connect the black test lead to the COM terminal.
3. Set the rotary switch to proper current range.

4. Open the measured circuit and connect the test leads in series.
5. The result will appear on the display.

Caution: while connected to the 10 A terminal, measurements can last only 15 seconds in a few seconds intervals.

Resistance measurement

1. Connect the red test lead to the VΩmA terminal.
2. Connect the black test lead to the COM terminal.
3. Set the rotary switch to proper Ω range.
4. If the resistance measurement will be conducted on the circuit, disconnect the circuit from power and discharge all capacitors.
5. Connect the test leads to the measured circuit.
6. The result will appear on the display.

Diode measurement

1. Connect the red test lead to the VΩmA terminal.
2. Connect the black test lead to the COM terminal.
3. Set the rotary switch to position ⏩ .
4. Connect the red lead to anode of the diode, and black to the cathode.
5. Voltage drop will be displayed. If the display shows the "1", it means that the polarization is reversed.

Temperature measurement (model RB-838 model)

1. Connect the red lead of the K-type thermocouple to the VΩmA terminal.
2. Connect the black lead of the K-type

thermocouple to the COM terminal.
3. Set the rotary switch to °C position.
4. The temperature will be displayed.
5. Maximum measurement of the temperature is 250°C / 482°F.

Continuity test (models RB-838 and RB-830BUZ only)

1. Connect the red test lead to the VΩmA terminal.
2. Connect the black test lead to the COM terminal.
3. Set the rotary switch to the •)) position.
4. Connect the test leads to a measured circuit. If the resistance is lower than 30 Ω, the buzzer will buzz.

hFE transistor test

1. Set the rotary switch to the hFE position.
2. Determine the type of transistor (PNP or NPN) and connect the emitter, base and collector to proper sockets.
3. Approximate value of hFE will be displayed.

Generator function (model RB-830BUZ only)

1. Set the rotary switch to position ⎍ .
2. Test signal 50 Hz will appear between terminals VΩmA and COM. Input voltage is approx. 5 V with impedance 50 KΩ.

CLEANING AND MAINTENANCE

- Clean the device with soft, slightly damp cloth, without abrasive agents.
- To change the battery and the fuse, unscrew two screws from the back of the device. After opening the battery cover, replace the battery (note the polarity) and the fuse. Close the battery cover and screw in two screws.

SPECIFICATION

DC voltage

Range	Resolution	Accuracy
200 mV	100 µV	±(0,5% + 3)
2000 mV	1 mV	±(0,8% + 5)
20 V	10 mV	
200 V	100 mV	
1000 V	1 V	±(1% + 5)

Overload protection: 200 V AC for 200 mV range; 1000 V DC or 750 V for all ranges.

AC voltage

Range	Resolution	Accuracy
200 V	100 mV	±(2% + 10)
750 V	1 V	

- Average responding calibrated in rms of a sine wave.
- Frequency range: 45 Hz ~ 450 Hz
- Overload protection: 1000 V DC or 750 V for all ranges.

Continuity test (models RB-838 and 830-BUZ only)

Range	Description
	If the resistance is lower than 30 Ω, the buzzer will buzz.

Overload protection: for 15 seconds in max. 220 V.

DC current

Range	Resolution	Accuracy
200 µA	100 nA	±(1,8% + 2)
2000 µA	1 µA	
20 mA	10 µA	
200 mA	100 µA	±(2% + 2)
10 A	1 mA	±(2% + 10)

Overload protection: 500 mA / 250 V fuse (10 A range is not protected with fuse)

Resistance

Range	Resolution	Accuracy
200 Ω	0,1 Ω	±(1% + 10)
2000 Ω	1 Ω	±(1% + 4)
20 KΩ	10 Ω	
200 KΩ	100 Ω	
2000 KΩ	1 KΩ	

- Max. voltage of open circuit: 3,2 V
- Overload protection: for 15 seconds in max. 220 V.

Temperature (model RB-838 only)

Range	Resolution	Accuracy
-40°C ~ 150°C	1°C	±(1% + 4)
150°C ~ 1370°C		±(1,5% + 15)
-40°F ~ 302°C	1°F	±(1% + 4)
302°F ~ 1999°C		±(1,5% + 15)